

SECTION 15050

BASIC MECHANICAL MATERIALS AND METHODS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of Contract, including General and Supplementary Conditions and Division 1 Specification Sections, apply to this Section.

1.2 SUMMARY

- A. This Section includes the following basic mechanical materials and methods to complement other Division 15 Sections.
 - 1. Supports and anchors
 - 2. Mechanical identification
 - 3. Access panels.

1.3 DEFINITIONS

- A. Finished Spaces: Spaces other than mechanical and electrical equipment rooms, furred spaces, pipe and duct shafts, unheated spaces immediately below the roof, spaces above ceilings, unexcavated spaces, crawl spaces, and tunnels.
- B. Exposed Interior Installations: Exposed to view indoors. Examples include finished occupied spaces and mechanical equipment rooms.
- C. Exposed Exterior Installations: Exposed to view outdoors, or subject to outdoor ambient temperatures and weather conditions. Examples include rooftop locations.
- D. Concealed Interior Installations: Concealed from view and protected from physical contact by building occupants. Examples include above ceilings and in duct shafts.
- E. Concealed Exterior Installations: Concealed from view and protected from weather conditions and physical contact by building occupants, but subject to outdoor ambient temperatures. Examples include installations within unheated shelters.

1.4 SUBMITTALS

- A. General: Submit the following according to the Conditions of the Contract and Division 1 Specification Sections.
- B. Shop drawings detailing fabrication and installation for metal and wood supports and anchorage for mechanical materials and equipment.
- C. Coordination drawings for access panel and door locations.

1.5 QUALITY ASSURANCE

- A. UL and FM Compliance: Provide meters, gauges, and supports which are UL-listed and FM approved.

- B. MSS Standard Compliance: Provide pipe hangers and supports of which materials, design, and manufacture comply with MSS SP-58.
- C. Equipment Selection: Equipment and systems scheduled or specified on the Construction Documents indicate the basis of design, and shall be considered the minimum acceptable performance to meet the design requirements. If the performance, capacity or efficiency of the basis of design equipment or system is reduced by the equipment manufacturer or representative subsequent to issuance of the documents, the scheduled minimum acceptable performance shall remain the requirement for the project and shall be met regardless of changes by the equipment manufacturer or representative.
- D. Equipment of greater or larger power, dimensions, capacities, and ratings may be furnished provided such proposed equipment is approved in writing and connecting mechanical and electrical services, circuit breakers, conduit, motors, bases, and equipment spaces are increased. No additional costs will be approved for these increases, if larger equipment is approved. If minimum energy ratings or efficiencies of the equipment are specified, the equipment must meet the design requirements and commissioning requirements.

1.6 SEQUENCING AND SCHEDULING

- A. Coordinate mechanical equipment installation with other building components.
- B. Arrange for chases, slots, and openings in building structure during progress of construction to allow for mechanical installations.
- C. Coordinate the installation of required supporting devices and set sleeves in poured-in-place concrete and other structural components as they are constructed.
- D. Sequence, coordinate, and integrate installations of mechanical materials and equipment for efficient flow of the Work. Coordinate installation of large equipment requiring positioning prior to closing in the building.
- E. Coordinate connection of electrical services.
- F. Coordinate connection of mechanical systems with exterior underground and overhead utilities and services. Comply with requirements of governing regulations, franchised service companies, and controlling agencies.
- G. Coordinate requirements for access panels and doors where mechanical items requiring access are concealed behind finished surfaces.

1.7 PROJECT CONDITIONS

- A. Conditions Affecting Selective Demolition: The following project conditions apply:
 - 1. Protect adjacent materials indicated to remain. Install and maintain dust and noise barriers to keep dirt, dust, and noise from being transmitted to adjacent areas. Remove protection and barriers after demolition operations are complete.
 - 2. Locate, identify, and protect mechanical services passing through demolition area and serving other areas outside the demolition limits. Maintain services to areas outside demolition limits. When services must be interrupted, install temporary services for affected areas.

- B. Conditions Affecting Excavations: The following project conditions apply:
1. Maintain and protect existing building services which transit the area affected by selective demolition.
 2. Protect structures, utilities, sidewalks, pavements, and other facilities from damage caused by settlement, lateral movement, undermining, washout, and other hazards created by excavation operations.
 3. Existing Utilities: Locate existing underground utilities in excavation areas. If utilities are indicated to remain, support and protect services during excavation operations.
 4. Use of explosives is not permitted.

PART 2 - PRODUCTS

2.1 SUPPORTS AND ANCHORS

- A. See Drawing

2.2 MECHANICAL IDENTIFICATION

- A. Equipment Markers:

1. General: Engraved, color-coded laminated plastic. Include contact-type, permanent adhesive or fasteners to mount on equipment.

NOTE: Coordinate if Owner has a required equipment bar code system that also needs to be specified here.
2. Terminology: Match drawing schedules as closely as possible unless directed otherwise by Owner.
3. Data Required:
 - a. Equipment Description, i.e. Thermal Equalizing Fan.
 - b. Schedule Mark, i.e. TEF-1.
4. Marker Size: 2-1/2 by 4 inches for main control valves; 4-1/2 by 6 inches for equipment.

2.3 ACCESS PANELS

- A. All panels shall be MILCOR, Style "M" for masonry, Style A for acoustical tile, and Style K for plaster; except that Fire Rated UL 1-1/2 hour and "B" label access panels shall be furnished in fire-rated walls and ceilings as indicated on the Drawings.
- B. Access doors shall be 12-inch x 12-inch minimum size for valves and water hammer arrestors and shall be 24-inch x 36-inch for access to equipment and filters.

PART 3 - EXECUTION

3.1 EQUIPMENT INSTALLATION-COMMON REQUIREMENTS

- A. Install equipment to provide the maximum possible headroom where mounting heights are not indicated.
- B. Install equipment according to approved submittal data. Portions of the Work are shown only in diagrammatic form. Refer conflicts to the Architect.
- C. Install equipment level and plumb, parallel and perpendicular to other building systems and components in exposed interior spaces, except where otherwise indicated.
- D. Install mechanical equipment to facilitate servicing, maintenance, and repair or replacement of equipment components. Connect equipment for ease of disconnecting, with minimum of interference with other installations. Extend grease fittings to an accessible location.
- E. Install equipment giving right-of-way to piping systems installed at a required slope.

3.2 SUPPORTS AND ANCHORS INSTALLATION

- A. Hangers and Supports:
 - 1. General: Piping shall not be supported from bottom cord of bar joist or from metal roof deck, unless approved by Structural Engineer. Piping may be supported at panel points of bar joists.
 - 2. Install hangers and supports complete with necessary inserts, bolts, rods, nuts, washers and other accessories.

END OF SECTION